Unit 1 Quiz 2 Probability Review **Name**_____

1. A coin is flipped 4 times. Create a tree diagram to represent the sample space.

   a. Tree Diagram:

   b. List the events that represent exactly 3 tails.

   c. List the events that you get a heads first and second.

2. Let **R** and **T** be events of an experiment with sample space **S**. Suppose P(R) = 0.2, P(T) = 0.8, And $P(R \cap T) = 0.1$, find:

   a. $P(R^c)$ b. $P(R \cup T)$

   c. $P(R^c \cup T^c)$ d. $P(R^c \cap T)$

3. There are 500 students at a school. 150 play a sport, 65 play a musical instrument, and 25 play both.

   a. What is the probability that a student plays both or only a musical instrument?

   b. What is the probability that a student selected at random from this group plays exactly one of these two types of activities?

4. Suppose you roll a pair of dice.

   a. Draw a table to represent the sample space.

   b. Find the probability that the product of the two die is 6 or the sum is 5.

   c. Find the probability that the first number is a multiple of 2 and the second is even.

Unit 1 Quiz 2 Probability Review **Name**_____

5. An election ballot asks voters to select no more than three city commissioners but at least one from a group of six candidates. In how many ways can this be done?

   b. Suppose they chose exactly the 3 commissioners and designated them to specific jobs. How many ways can this be done?

6. There are 20 melted Mini Snickers bars in a bag of 65. If you choose 5, one at a time and without replace, what is the probability that the first one is not melted and the last 4 are melted?

7. What does it mean if two sets are mutually exclusive? Give an example.

8. Martha has 4 pairs of sneakers and 7 pairs of sandals. Without looking, she pulls a sandal from the closet. What is the probability that the next shoe she pulls out will also be a sandal?

9. Consider a set of cards labeled 1-10. Let set A = even numbers and set B = # greater than 8. Find the probability of A or B.

10. A used car lot has 17 Toyota minivans, 19 Ford minivans, 12 Toyota trucks, and 11 Ford trucks. If a vehicle is selected at random from the used car lot, find the probability the vehicle is a Toyota or a truck.

11. A bag of candy contains 6 Hershey Kisses, 7 Reese's Cups, 12 Starbursts, and 4 Jolly Ranchers. Suppose 4 pieces of candy are drawn for the bag, one at a time, and without replacement. What is the probability that you will choose a Jolly Rancher, a Reese's Cup, another Jolly Rancher and a Starburst, in that order?

12. What is the probability that the LEGO factory will produce at least one defective LEGO during the next 5 years if the probability of a defect is .007 per year?